APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): September 10, 2007

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: St. Louis, Bowling Green Town Center-Wetlands C&D, 2007-467

C. PROJECT LOCATION AND BACKGROUND INFORMATION:
State: Missouri County/parish/borough: Pike City: Bowling Green
Center coordinates of site (lat/long in degree decimal format): Lat. 39.3298724° **N**, Long. -91.18109363° **W**.
Universal Transverse Mercator: 15
Name of nearest waterbody: Cuivre Creek
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: North Fork Cuivre River
Name of watershed or Hydrologic Unit Code (HUC): Cuivre River HUC-8
☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):
☒ Office (Desk) Determination. Date: August 13, 2007
☒ Field Determination. Date(s): August 14, 2007

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Pick List** *"navigable waters of the U.S."* within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]
☐ Waters subject to the ebb and flow of the tide.
☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.
Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. Waters of the U.S.

a. Indicate presence of waters of U.S. in review area (check all that apply): [1]
☐ TNWs, including territorial seas
☐ Wetlands adjacent to TNWs
☐ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
☐ Non-RPWs that flow directly or indirectly into TNWs
☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
☒ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
☐ Impoundments of jurisdictional waters
☐ Isolated (interstate or intrastate) waters, including isolated wetlands

b. Identify (estimate) size of waters of the U.S. in the review area:
Non-wetland waters: linear feet: width (ft) and/or acres.
Wetlands: 1.06 acres.

c. Limits (boundaries) of jurisdiction based on: **1987 Delineation Manual**
Elevation of established OHWM (if known): .

2. Non-regulated waters/wetlands (check if applicable):[3]
☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.
Explain: .

[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW
Identify TNW: .

Summarize rationale supporting determination: .

2. Wetland adjacent to TNW
Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

(i) General Area Conditions:
Watershed size: **Pick List**
Drainage area: **Pick List**
Average annual rainfall: inches
Average annual snowfall: inches

(ii) Physical Characteristics:
(a) Relationship with TNW:
☐ Tributary flows directly into TNW.
☐ Tributary flows through **Pick List** tributaries before entering TNW.

Project waters are **Pick List** river miles from TNW.
Project waters are **Pick List** river miles from RPW.
Project waters are **Pick List** aerial (straight) miles from TNW.
Project waters are **Pick List** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: .

Identify flow route to TNW[5]: .
Tributary stream order, if known: .

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.
[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

(b) General Tributary Characteristics (check all that apply):

Tributary is: ☐ Natural
☐ Artificial (man-made). Explain: .
☐ Manipulated (man-altered). Explain: .

Tributary properties with respect to top of bank (estimate):
Average width: feet
Average depth: feet
Average side slopes: **Pick List.**

Primary tributary substrate composition (check all that apply):

☐ Silts	☐ Sands	☐ Concrete
☐ Cobbles	☐ Gravel	☐ Muck
☐ Bedrock	☐ Vegetation. Type/% cover:	
☐ Other. Explain: .		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: moderate erosion along channel banks.
Presence of run/riffle/pool complexes. Explain: small pools but no water present.
Tributary geometry: **Pick List**
Tributary gradient (approximate average slope): %

(c) Flow:
Tributary provides for: **Pick List**
Estimate average number of flow events in review area/year: **Pick List**
Describe flow regime: .
Other information on duration and volume: .

Surface flow is: **Pick List.** Characteristics: Flows are confined within a channel evident in aerial photographs.

Subsurface flow: **Pick List**. Explain findings: .
☐ Dye (or other) test performed: .

Tributary has (check all that apply):
☐ Bed and banks
☐ OHWM[6] (check all indicators that apply):

☐ clear, natural line impressed on the bank	☐ the presence of litter and debris
☐ changes in the character of soil	☐ destruction of terrestrial vegetation
☐ shelving	☐ the presence of wrack line
☐ vegetation matted down, bent, or absent	☐ sediment sorting
☐ leaf litter disturbed or washed away	☐ scour
☐ sediment deposition	☐ multiple observed or predicted flow events
☐ water staining	☐ abrupt change in plant community
☐ other (list):	

☐ Discontinuous OHWM.[7] Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

☐ High Tide Line indicated by:	☐ Mean High Water Mark indicated by:
☐ oil or scum line along shore objects	☐ survey to available datum;
☐ fine shell or debris deposits (foreshore)	☐ physical markings;
☐ physical markings/characteristics	☐ vegetation lines/changes in vegetation types.
☐ tidal gauges	
☐ other (list):	

(iii) Chemical Characteristics:
Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).
Explain: .
Identify specific pollutants, if known: .

[6]A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7]Ibid.

(iv) Biological Characteristics. Channel supports (check all that apply):

☐ Riparian corridor. Characteristics (type, average width): .
☐ Wetland fringe. Characteristics: .
☐ Habitat for:
☐ Federally Listed species. Explain findings: .
☐ Fish/spawn areas. Explain findings: .
☐ Other environmentally-sensitive species. Explain findings: .
☐ Aquatic/wildlife diversity. Explain findings: .

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:

Properties:

Wetland size: 1.06 acres

Wetland type. Explain: Using Cowardin Classification Hierarchy - Emergent Wetland Class - since wetlands dominant vegetative coverage is composed of erect, rooted, herbaceous hydrophytes, which are present for most of the growing season in most years.

Wetland quality. Explain:The wetlands lie in a linear depressions that is mapped as a blue line on the USGS Topographic Quadrangle Map. This review area drains toward Cuivre Creek. The low lying depressional wetlands are situated between two agricultural fields that convey sheet flow to depressional Wetlands C and D. Wetland C and D contained standing water during a site visit by an environmental consulting firm on June 19, 2007. As stated above the wetlands are dominated by hydrophytic vegetation. Water within Wetland D contained an abundance of filamentous green algae during the June 19, 2007 site visit. The relative quality of the wetlands based on geographic and landscape positions appeared to be in good condition.

Project wetlands cross or serve as state boundaries. Explain: No.

(b) General Flow Relationship with Non-TNW:

Flow is: **Intermittent flow**. Explain: Wetlands C and D are connected to one another through an area indicated as a blue line on the USGS topographic map. The soils that persist on a majority of the site are mapped as Mexico silt loam downslope to a non-manipulated reach of intermittent tributary. The Mexico soil series is mapped as a partially hydric soil that contains a water table that varies from 6 to 18-inches deep. The swale is gently sloping with a 0.015 percent slope. Wetland C is a larger wetland complex that extends onto adjoining property and flow through this area ultimately drains into the unnamed tributary.

Surface flow is**: Discrete and confined**

Characteristics: Photographs labeled 7 and 8 depict a concave vegetated swale that would carry water from Wetlands C and D directly into the area indicated in blue on the supporting site map. Although the area is mapped as a blue line a channel containing a defined bed and channel banks with an ordinary high water mark is likely not apparent until the area indicated on the attached site map.

Subsurface flow: **Unknown**. Explain findings: .

☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:

☐ Directly abutting
☒ Not directly abutting

☒ Discrete wetland hydrologic connection. Explain: Based on our review of aerial photography consisting of Digital Ortho Quad images, infrared imagery, and Missouri Cares Digital Ortho Quads, a continuous gentle slope can be seen on the photographs from Wetland C to Wetland D which are located in an area mapped as a blue line tributary. .

☐ Ecological connection. Explain: .
☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW

Project wetlands are **30 (or more)** river miles from TNW.
Project waters are **20-25** aerial (straight) miles from TNW.
Flow is from: **Wetland to navigable waters.**
Estimate approximate location of wetland as within the **500-year or greater** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: .

Identify specific pollutants, if known: .

(iii) Biological Characteristics. Wetland supports (check all that apply):

☐ Riparian buffer. Characteristics (type, average width): .
☒ Vegetation type/percent cover. Explain: Percent vegetative coverage in Wetland C and D is nearly 100 percent and entirely composed of hydrophytes (see wetland determination data sheets).

☒ Habitat for:

☐ Federally Listed species. Explain findings: .

☐ Fish/spawn areas. Explain findings: .

☐ Other environmentally-sensitive species. Explain findings: .

☒ Aquatic/wildlife diversity. Explain findings:Reptiles, amphibians, macro-invertebrates, as well as hydrophytic plant species. The plants suited to grow in Wetlands are uniquely adapted to grow in different degrees of soil saturation or depth of standing water.

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: **2**

Approximately (1.06) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)
Wetland C (No)	0.91	Wetland D (No)	0.15

Summarize overall biological, chemical and physical functions being performed: The physical, chemical, and biological interactions within wetlands are referred to as wetland functions. The functions within Wetlands C and D include surface and subsurface water storage, nutrient cycling, particulate removal, maintenance of plant and animal communities, water filtration or purification, and groundwater recharge. Wetlands C and D attenuate overflow from a pond and runoff from adjoing farm fields by distribution through various pathways. Following stormevents water will pass through the wetland, some of which will continue to the downslope unnamed tributary, as water levels recede some will be stored in the depression and used by the hydrophytic vegetation for photosysthesis, and some will naturally soak into the ground which recharges water tables and underlying aquifers while some will evaporate. This temporary storage can help reduce peak water flows after a storm by slowing the movement of water into the unnamed tributary and effectively treating the water through biogeochemical processes to improve water quality. Wetlands C and D enhance the decomposition of organic matter and incorporates nutrients back into the food chain. Hydrological fluctuations enhance nutrient flow in the wetlands, and into the unnamed tributary, Cuivre Creek, and ultimately the North Fork Cuivre River. Hydrologic variations within the wetland, also results in the wetlands acting as a sink, source, or transformer of organic and inorganic forms of Nitrogen as well as Phosphorous and orthophosphates. Hydrophytic vegetation dominates the wetland plant communities and bury large amounts of organic Nitrogen in the form of root stocks and detritus. Due to the presence of standing water within the wetlands, each can process inorganic Nitrogen through a process known as denitrification. Denitrification is the chemical conversion of inorganic Nitrogen to Nitrogen gas that is lost to the atmosphere and the biproduct is then used by the hydrophytes and in essence purifies the water before release back into the tributary system. The wetlands also functions to trap Phosphorous-laden sediments that enter the wetland boundaries through stormwater runoff or sheet flow. The potential for long hydraulic residence times in Wetland C and D and potential large contributions of iron from ground water make the wetland an effective sediment and Phosphorous trap. The abundance of hydrophytes within the wetland areas and subsequent senescence of hydrophytes from seasonal weather changes and hydrologic events can make burial of Phosphorous a substantial sink of Phosphorous in the wetland. Although emergent vegetation increases water clarity in shallower areas, high ionic-content water decreases the duration of high-turbidity episodes caused by runoff through increasing the flocculation rate. Water with high ionic-content is influenced by a shallow groundwater table which contributes high concentrations of bivalent cations. Bivalent cations increase flocculation rates of inorganic suspended material. The high bivalent cation content is enhanced by ground water received by the wetlands, which indirectly increases the trapping efficiency of sediment affinitive constituents such as Phosphorous. Microbes present within Wetland C and D contribute to litter decay processing through oxidation of organic matter. The aquatic invertebrates feed and live on plant litter after microbial conditioning and in turn provide forage for vertebrates, such as waterfowl, shorebirds, and wading birds which frequent the wetland. The wetland also provides habitat for amphibians and reptiles as well.

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: Wetlands C and D are located in a broad drainage swale that receives its hydrology from rainfall, stormwater runoff, and sheet flow from adjoining agricultural fields. The wetlands contain a hydrologic connection with an unnamed intermittent tributary which is a first order tributary to Cuivre Creek. Cuivre Creek flows 4.5 miles to the North Fork Cuivre River. The U.S. Army Corps of Engineers determined that the North Fork Cuivre River meets the criteria of a Traditional Navigable Water 31 miles downstream from the Cuivre Creek and North Fork Cuivre River convergence. Wetlands C and D are hydrologically connected to one another through a grassed swale that is indicated as a blue line on the USGS topographic map. The wetlands are further connected to the downstream tributary through wetland that continues beyond the review area and abuts the blue line tributary. Based on the gentle slope of the swale and size of the drainage area, the volume of water that flows through the swale is sufficient to carry pollutants to the tributary, which flows into Cuivre Creek and into North Fork Cuivre River. The chemical integrity of the receiving traditional navigable water has the potential to be effected by nutrients, trace metals, organic compounds, fecal material, and pesticides all of which can degrade water quality. Decreased water quality effects water chemistry which stresses native biota thereby disrupting the food chain. Alterations to the physical environment would reduce the amount of organic carbon transported to the tributary, Cuivre Creek and the North Fork of the Cuivre River. Decreased water quality leads to increased expenses for treating drinking water supplies, as well as effects water chemistry which stresses native biota thereby disrupting the food chain. Wetlands C and D contribute to the health of the physical, chemical, and biological state of the receiving Traditional Navigable Water, which in this case is the North Fork Cuivre River. Wetland C and D collects stormwater and sheet water runoff which increases hydrologic residence times and allows the wetlands to greatly improve water quality before water escapes as groundwater recharge, surface outflow, or through evapotranspiration. As the land dries, the water table drops, and water stored in the wetland is absorbed into the land surface which recharges water tables and underlying aquifers, or evaporates into the atmosphere. Based on seasonal and hydrologic variations within the wetland, this wetland can act as a sink, source, or transformer of organic and inorganic forms of Nitrogen as well as Phosphorous and orthophosphates. Due to the shallow groundwater table indidcated on the Pike County Soil Survey Map, there is likely a high bivalent cation content in Wetlands C and D. A high level of bivalent cations coupled with a high density of hydrophytic vegetation increases the trapping efficiency of sediment affinitive constituents such as Phosphorous which also directly reduces sediment loads transported through the drainage swale to receiving waters. Wetlands C and D also function to enhance decomposition of organic matter and incorporate nutrients back into the food chain. Wetlands C and D contain long seasonal hydrological regime which is essential to maintaining the balance between litter decay and accumulation and to sustaining the biotic components of detrital processing and wetland productivity. This type of hydrology also influences nutrient cycling in the wetland. Because of leaching and subsequent decomposition, the water column is rich in nutrients for several months after inundation which benefits water quality, food web, and life cycles in the receiving waters. Aquatic invertebrates have diverse adaptations for living in seasonally ponded environments, and, without dynamic ponding regimes, many of these organisms are incapable of completing their life cycles. Aquatic invertebrates are an important component to the food chain and assist in sustaing downstream aquatic invertebrate communities and wildlife that frequest the wetland to forage. The North Fork Cuivre River is known to support fishes. Fishes are dependent on aquatic macro-invertebrate populations for their survival either by direct consumption or large fish that consume the bait fish which feed upon the smaller fishes. Likewise, there are 16 mussel species known to exist in the Cuivre River. Mussels are dependent upon host fishes whose survival depend upon aquatic macro-invertebrates. The fishes are lured by projections from mussels that taunt fishes into striking so that glochidia (young juveniles) attach to the fishes gills to be transported to various locations in the river until they are able to sustain life on their own terms. Outflow from Wetland C and D along with flow through the unnamed tributary assist in improving water quality by treating and diluting pollutants such as inorganic Nitrogen and Phosphorous, provide litter and organism processing of litter which is important to sustaining biologic communities in the relatively permanent waters, and contributes flow into the North Fork Cuivre River all of which result in more than an insubstantial or speculative affect on the physical, chemical, or biological integrity of the North Fork Cuivre River.

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   - ☐ TNWs: linear feet width (ft), Or, acres.
   - ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   - ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: .

☐ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

3. Non-RPWs[8] that flow directly or indirectly into TNWs.
☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

4. Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.
☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.
☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.
☒ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: **1.06** acres.

7. Impoundments of jurisdictional waters.[9]
As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
☐ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]
☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.

[8] See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
[10] Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.*

☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain: .
☐ Other factors. Explain: .

Identify water body and summarize rationale supporting determination: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .
☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):
☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
☐ Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: .
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☒ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps: .
☐ Corps navigable waters' study: .
☐ U.S. Geological Survey Hydrologic Atlas: .
☐ USGS NHD data.
☐ USGS 8 and 12 digit HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name:1:24,000 Bowling Green.
☒ USDA Natural Resources Conservation Service Soil Survey. Citation:Web Soil Survey Pike County.
☒ National wetlands inventory map(s). Cite name: Bowling Green.
☐ State/Local wetland inventory map(s): .
☐ FEMA/FIRM maps: .
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date):Missouri CARES natural resource interactive mapping database dated March 21, 1996.
or ☐ Other (Name & Date): .
☐ Previous determination(s). File no. and date of response letter: .
☐ Applicable/supporting case law: .
☐ Applicable/supporting scientific literature: .
☐ Other information (please specify): .

B. ADDITIONAL COMMENTS TO SUPPORT JD: .